Sociology 361   **Fall 2024**

This practice problem will help prepare you for the final exam. It is a longer problem than any of the three problems you will have to complete for the final, because it is designed to cover the various regression topics from the second half of the course that will be covered by the final (across multiple questions).

Use the 1994 General Social Survey to complete the following problem. Show your output in a log file and answer all the questions.

Occupational prestige is a measure of the average standing or social status of an occupation. Analyze how age, gender, race, education (educ), and father's occupational prestige (papres80) affect occupational prestige (prestg80), using the following steps.

1. First, estimate a regression testing for additive, linear effects of age, gender, and race on prestige. Provide an interpretation of the results: which variables have significant effects and what is the nature of those effects? How much variance in occupational prestige is explained by the additive, linear effects of these variables?

2. Test whether the effect of age, net of the other variables you included in step 1, is curvilinear, using the appropriate quadratic expression. What do you find? If you find the effect is curvilinear, then describe the effect: does prestige tend to increase or decrease with age? At what age does the effect of age on prestige change direction? All things considered, explain how prestige tends to vary by age.

3. Now include father's occupational prestige (papres80). Does father's occupational prestige mediate, suppress, or confound the effects of other variables? Explain.

4. Now include respondent's years of education in your model. Does education mediate, suppress, or confound the effects of other variables? Explain.

5. Now test the hypothesis that the effect of education on prestige is stronger for men than for women. What do you find? Based on this model, what is the expected difference in prestige between black men and women with 12 years of education in prestige? What about white men and women with 16 years of education? Provide statistical evidence to support all your answers. Overall, what does this exercise suggest about the role of education in addressing the gender gap in occupational prestige in 1994?

6. Use Excel or Stata to produce a plot showing the effect of age on occupational prestige for white, black, and Asian American men with twelve years of education.

7. Give one example of each of the following: another potential mediating variable, another potential confounding variable, and another potential interaction that it might make sense to include in this model. For each one, explain why it would be a good variable for its (respective) purpose.